

Reply Under 37 CFR 1.116
Expedited Procedure
Technology Center 3744

Application No.: 10/541,803

Docket No.: 29171/39318A

AMENDMENTS TO THE SPECIFICATION

Please replace paragraph [0022] of the original application with the following amended paragraph, in which additions are underlined and deletions are struck-through.

[0022] With reference to FIG. 1, it can be seen that each unit element 22 may include a single fluid inlet tube 24 and four fluid outlet tubes 26. As seen in FIG. 2, each outlet tube 26 is in fluid communication with a series of secondary outlet tubes 28, 30, and 32 each having a successively smaller diameter, respectively. Similarly, the inlet tube 24 is in fluid communication with a series of secondary inlet tubes 34, 36, and 38, each having a successively smaller diameter, respectively. The secondary outlet tube 32 has a minimum outlet tube diameter, and the secondary inlet tube 38 has a minimum inlet tube diameter. The inlet tube 38 having the minimum inlet tube diameter is in fluid communication with at least one of the secondary outlet tubes 32 having the minimum outlet tube diameter. In order to maximize the performance of a heat sink, the unit element 22 may be configured according to Murray's Law. In the example of a tube configuration shown in FIG. 2, the radius, r_{34} , of the inlet tube 24, that connects with four of the tubes 34 may therefore be defined as follows:

$$r_{24}^3 = 4 * (r_{34}^3)$$

where r_{34} is the radius of each of the tubes 34. In this configuration, an intersection may be the intersection of two or more tubes, which are inlet tubes and/or outlet tubes. In some embodiments, some of the intersections have an incoming flow, a first outgoing flow perpendicular to the incoming flow, and a second outgoing flow orthogonal to the first outgoing flow. For example, the intersection of the tubes 24 and 34 in Fig. 2 includes an incoming fluid flow and five outgoing flows. Four of the five outgoing flows from the intersection of the tubes 24 and 34 (i.e., the flows from the tube 24 to the tubes 34) are perpendicular to the incoming flow of the intersection. Three of the five outgoing flows from the intersection of the tubes 24 and 34 (i.e., the outgoing flow in the tube 24 and two of the outgoing flows in the

**Reply Under 37 CFR 1.116
Expedited Procedure
Technology Center 3744**

Application No.: 10/541,803

Docket No.: 29171/39318A

tube 34) are orthogonal to any outgoing flow chosen as perpendicular to the incoming flow. Some of the intersections may have fewer or more outgoing flows and/or may have outgoing flows that are not orthogonal to each other. Additionally, and as depicted in Fig. 2, an intersection may have an outgoing flow that has a flow axis coaxial, or substantially coaxial, with the incoming flow (e.g., a continuation of the tube through which the incoming flow flows). This outgoing flow may be the outgoing flow that is orthogonal to the first outgoing flow.